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The Bigger Picture: How the Fourth Pillar Impacts Retirement Preparedness

Fourth-pillar assets, from real estate to financial investments and insurance, have been mostly ignored by policymakers in assessing Canadians' retirement outlook. They should be considered, since including them significantly shrinks the size of the population at risk of having inadequate retirement income.

Jeremy Kronick and Alexandre Laurin

About The Authors

Jeremy Kronick
is a Senior Policy Analyst at the C.D. Howe Institute.

Alexandre Laurin
is Director of Research at the C.D. Howe Institute.

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Daniel Schwanen
Vice President, Research

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The Study In Brief

In the face of declining private-sector pension coverage, policymakers have expressed concerns about a perceived lack of voluntary savings for retirement, through vehicles such as Registered Retirement Savings Plans (RRSPs). This gap has fueled the policy debate around broad-based compulsory solutions, such as the Canada Pension Plan expansion or the Ontario Retirement Pension Plan.

But other sources of wealth, although not accumulated explicitly for the purpose of supporting retirement, can also play an important role once people stop working. Included are real estate, taxable financial investments, privately owned businesses, other durable assets, and tax-free savings accounts. Employment and business earnings, insurance products, inheritances and other family transfers can all play a role in funding asset accumulation. These additional sources of wealth have been labelled the "fourth pillar" of retirement income by retirement experts.

Relying on publicly available survey data, this *Commentary* studies the impact of fourth-pillar assets on retirement wealth for households relying primarily on voluntary savings. Our findings suggest that fourth-pillar assets may significantly improve assessments of households' retirement readiness and that not giving them full consideration would be an important oversight.

About 39 percent of non-retired 35-to-64-year-old Canadian households will be primarily drawing from voluntary retirement savings and private wealth to sustain their retirement. Because of the voluntary nature of their retirement arrangements, these households are often labelled by policymakers as the group most at risk of unsatisfactory retirement outcomes.

But once we factor in wealth already accumulated from all sources, we can estimate the number of households in this group still at risk of insufficient retirement wealth. More than 40 percent of them have potentially already accumulated sufficient wealth (net of debts) in RRSPs, real estate, other tangible assets, financial assets and business assets. They would likely fare well in retirement, compared to their working years, without any more savings.

This means that a sizeable proportion of households targeted by policymakers as most at risk of retirement income insufficiency are in fact already in good financial shape. In total, this leaves about one-in-five employed 35-to-64-year-old households, most of them in the upper-income quintiles, likely needing to accumulate more retirement capital on a voluntary basis.

Therefore, when reflecting on claims that Canadians lack adequate savings for retirement, it is crucial to ask whether fourth-pillar assets have been fully considered in reaching this conclusion. Mandating new retirement wealth accumulation through one channel, such as CPP expansion, may impact accumulations in other channels for households already satisfied with their current tradeoff of future versus present consumption. Because households accumulate wealth in diverse ways and face various circumstances, the impact of fourth-pillar assets on the big picture is far from negligible and should not be ignored.

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In recent years, pension discussions have often centered on broad-based concerns about Canadians' perceived lack of savings for retirement and how this will impact their future retirement incomes.

This is not surprising, given rapid changes in the pension landscape. Declining interest rates and increasing longevity are putting pressure on workplace pension arrangements, resulting in private employers moving away from traditional defined-benefit schemes, and forcing many younger employees to rely on voluntary savings to fund their future retirements.

Meanwhile, low household-savings rates, coupled with growing household debts and perceived low voluntary contributions to Registered Retirement Saving Plans (RRSPs), have further fuelled the public policy debate. But is this the complete financial picture in terms of retirement-income adequacy?

By way of overview, Canadian households can count on various sources of wealth in retirement. Government payments through the Old Age Security (OAS)/Guaranteed Income Supplement (GIS) program and other fiscal benefits provide a basic income for all retirees. These payments are complemented by Quebec/Canada Pension Plan (Q/CPP) benefits. As agreed over the summer of 2016 by federal and provincial finance ministers (excluding Quebec and BC, for now), these benefits will be slowly expanded over the next 50 years. Combined, these government programs provide a guaranteed annual income stream and form Pillars 1 and 2 of the Canadian retirement income system.

Workers wishing to do better in retirement top up their income from pillars one and two with wealth accumulating explicitly for the purpose of supporting retirement; i.e., workplace pension arrangements – defined-contribution (DC) and defined-benefit (DB) pension plans – and tax-deferred retirement savings in individual registered plans.[1] These arrangements form the third pillar of the retirement income system. Several recent Canadian studies on the financial retirement preparedness of households have concentrated on the role that pillars one to three will likely play in the future.

But other sources of wealth, although not accumulated explicitly for the purpose of supporting retirement, can also play an important role once people stop working. Included are real estate, taxable financial investments, privately owned businesses, precious metals and jewelry, and tax-free savings accounts. We call these retirement income's fourth pillar (as in Vettese and Morneau 2012).

This *Commentary* concentrates on the potential impact of fourth-pillar assets on retirement wealth for households relying primarily on voluntary savings. It assesses how taking into consideration the full impact of all fourth-pillar assets would improve widespread perceptions about retirement preparedness and discusses the implications for government responses.

The authors thank Daniel Schwanen, Keith Ambachtsheer, Bob Baldwin, Philip Cross, David Dodge, David Laidler, James Pierlot, Fred Vettese, the Pension Policy Council of the C.D. Howe Institute and several anonymous reviewers for useful comments on earlier drafts. The authors retain responsibility for any remaining errors and the views expressed here.

1 Mostly RRSPs and Deferred Profit Sharing Plans.

Relying on a survey of wealth data at a granular level, we find:

- a great number of households made up of working 35-to-64-year-olds – fully 39 percent of them – are primarily relying on voluntary savings to sustain their current living standards in retirement. Because of the voluntary nature of their retirement arrangements, these are often labeled by policymakers as the most at-risk group.
- When we factor in wealth already accumulated from all sources, we can estimate the number of households in this group still at risk of insufficient retirement wealth.
- More than 40 percent of them have potentially already accumulated sufficient wealth (net of debts) in RRSPs, real estate, other tangible assets, financial assets and business assets. They would likely fare well in retirement, compared to their working years, without any more savings.
- This means that a sizable proportion of households targeted by policymakers as most at risk of retirement income insufficiency are in fact already in good financial shape.
- In total, this leaves 22.5 percent of all 35-to-64-year-old households, most of them in the upper-income quintiles, likely needing to accumulate more retirement capital on a voluntary basis.

Therefore, when reflecting on claims of Canadians lacking adequate savings for retirement, it is crucial to ask whether fourth-pillar assets have been fully considered in reaching this conclusion. Because households accumulate wealth in diverse ways and face various circumstances, the impact of fourth-pillar assets is far from negligible and should not be ignored. This result validates findings in previous work (Vettese and Morneau 2012, Hamilton 2015), and implies that broad-based mandatory government saving solutions, such as the recently agreed upon CPP expansion or the now defunct Ontario Registered Pension Plan (ORPP), are badly targeted.

The remainder of this *Commentary* discusses the different pillars of retirement income, reviews the various sources of fourth-pillar wealth, explains the methodology used for analyzing our survey data and assesses the cumulative impact of fourth-pillar wealth on the retirement preparedness of the subgroup of households widely considered to be at a greater risk.

Sources of Income in Retirement

In general, Canadian retirees can count on a mix of retirement wealth from various government and private sources. These can be divided into four distinct pillars.

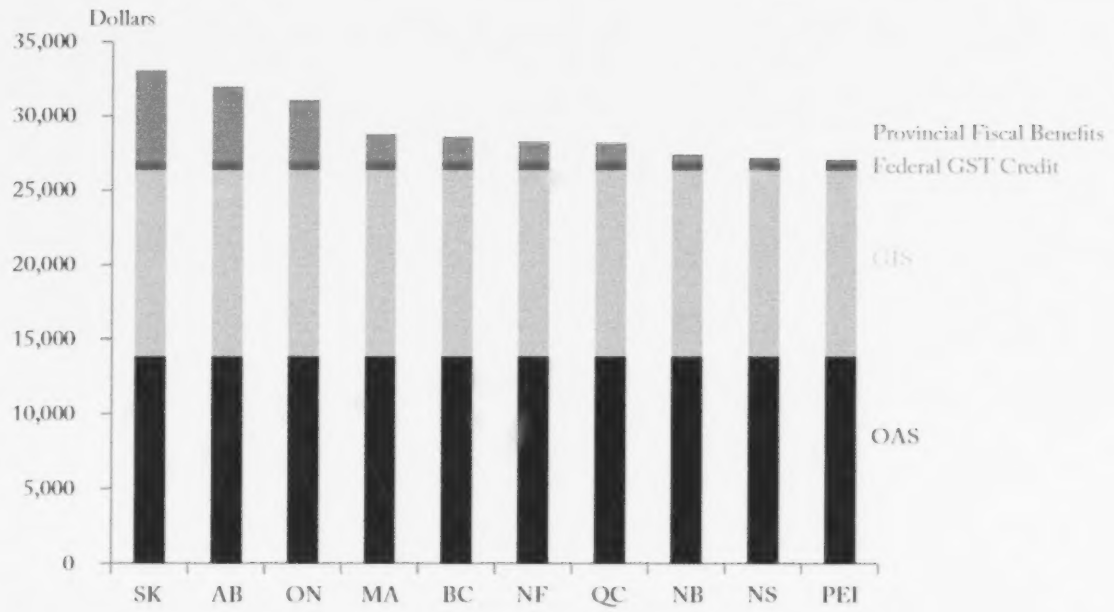
Pillars One to Three

The first pillar of retirement income consists of government transfer payments. They are paid from current government revenues and provide base benefits to seniors. OAS benefits and the GIS are age-based federal payments, payable starting at age 65. Seniors may delay take-up of OAS and receive a higher payment. Some provinces top up GIS payments for low-income seniors.

In addition to OAS/GIS, seniors are eligible for federal and provincial income-tested benefits available to all, such as the GST tax credit and provincial support such as Ontario's Trillium Benefits and Quebec's Solidarity Credit. All of these benefits are indexed to the cost of living and reduced as income from other sources rises. An elderly couple with no other sources of income in 2016 would be entitled to total first-pillar payments ranging from about $27,000 in Prince Edward Island to about $33,000 in Saskatchewan (Figure 1). The range for elderly singles goes from a low of about $18,000 in Prince Edward Island to a high of about $21,000 in Saskatchewan.

The second pillar of retirement income consists of the Q/CPP, an earnings-based public plan

Figure 1: Pillar One Annual Benefit Amounts for An Elderly Couple with No Other Sources of Income, 2016



Source: SPSD/M (2016).

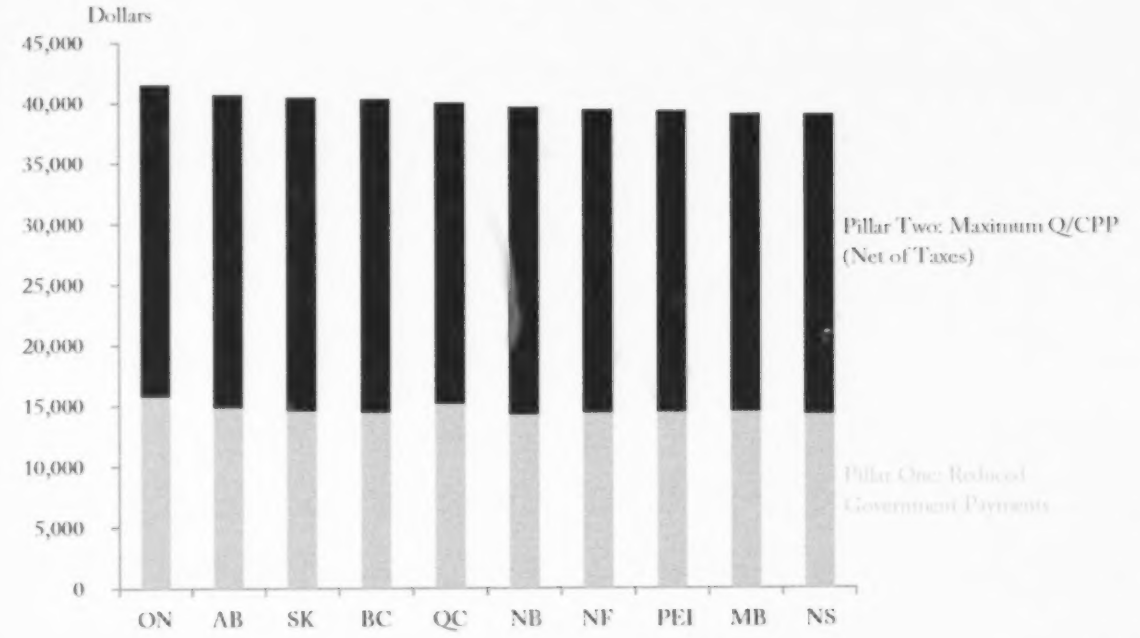
funded mainly on a pay-as-you-go basis.[2] Retirees may claim the Q/CPP starting at age 60, but the benefits are reduced for every year it is claimed before reaching 65.

Beyond 65, benefits are increased for each year the pension is delayed, up to 70 years old. Maximum per-person annual CPP benefits in 2016 are $8,390 if claimed at age 60, $13,110 if claimed at 65 and $18,616 if claimed at 70.[3] Supplemental CPP benefits will slowly and gradually rise over the next 50 years as a result of the recent federal/provincial agreement, ultimately expected to increase existing benefit levels by one-third to one-half. Because implementation of the expansion will be gradual over a long period of time, we have not integrated the expansion into our results.

2 The Q/CPP has accumulated substantial capital reserves, currently valued at about 20 percent of future liabilities. Investment income on these reserves should prevent the Q/CPP contribution rates from climbing in future years even as the proportion of retirees to workers increases substantially. In addition, the recently announced supplemental CPP benefits will be funded and gradually paid out of invested contributions.

3 See http://www.esdc.gc.ca/en/cpp/benefit_amount.page.

Figure 2: Maximum Government Benefits from Pillars One and Two for an Elderly Couple, Net of Taxes, 2016



Source: SPSD/M (2016).

In total, the first two retirement-income pillars are generally considered sufficient to ensure low- to modest-income earners do not suffer from a significant drop in their living standards post-retirement. After accounting for income-tested reductions of Pillar 1 benefits and taxes payable on Q/CPP benefits, an elderly couple eligible to receive maximum Q/CPP benefits in 2016 will receive total income from pillars 1 and 2 ranging from $39,000 in Nova Scotia and Manitoba to $41,500 in Ontario (Figure 2). An elderly single will receive an amount ranging from just under $18,000 to almost $22,500.

The third pillar of wealth in retirement consists of employee pension plans and private retirement savings plans. These include registered pension plans (RPPs) such as defined-benefit (DB) and defined-contribution (DC) plans,[4] employers' Deferred Profit Sharing Plans (DPSPs) and group Registered Retirement Savings Plans (RRSPs), as

4 By the end of 2016, Quebec employers will gradually be required to offer employee participation in newly created Voluntary Retirement Savings Plans. Outside of Quebec, many provinces and the federal government have recently enacted legislation making it possible for employers to enrol their employees in Pooled Registered Pension Plans (PRPPs). However, early evidence points to PRPPs struggling to gain any traction with employers.

Table 1: Percent of the Entire Canadian Workforce Covered by A Workplace Pension/Saving Plan, by Type of Plans and Sectors, 2013

Type of Workplace-Provided Plan	Private Sector	Public Sector	All
Defined-Benefit Pension Plan	8.5	18.8	**27.3**
Defined-Contribution Pension Plan	9.5	1.2	**10.7**
Group Registered Retirement Savings Plan (RRSP) and/or Deferred Profit Sharing Plan (DPSP)	10.0	—	**10.0**
All	**28.0**	**20.0**	**48.0**

Source: Office of the Superintendent of Financial Institutions (2015).

well as individual RRSPs. In 2013, about half of Canada's workforce was covered by an employer-sponsored registered pension plan, group RRSP or DPSP (Table 1).

The Fourth Pillar

Finally, most retirees can count on wealth accumulated in other assets – the fourth pillar. Much of the policy debate in Canada around the adequacy of retirement saving has ignored the role of fourth-pillar assets or has tended to acknowledge their potential role but ultimately dismisses their importance. Despite this lack of attention by policymakers, private wealth accumulated in assets other than pension and retirement saving plans can provide a significant source of retirement capital. These fourth-pillar assets include real estate and other tangible assets, publicly traded securities, privately owned business investments, insurance products, and tax-free savings account (TFSA) accumulations. Other than earnings and savings, inheritances and insurance payouts can also play a significant role in funding fourth-pillar asset accumulation.

Housing and Real Estate

Most Canadians have equity accumulated in their homes. The most recent data on home ownership from Statistics Canada identify about two-thirds of Canadian households as owning their principal residences.[5] Home-ownership rates increase with age and marital status. More than 80 percent of married (common-law) households owned their dwellings in 2011, and more than three-quarters of households aged 45 to 75 owned their homes.[6] The current stock of principal residences in Canada

5 Statistics Canada, Table 203-0027.

6 Statistics Canada, "Homeownership and Shelter Costs in Canada," catalogue number 99-014-XIE2011002.

was valued at $3.3 trillion in 2012.[7] As Hamilton (2015) remarks, "The family home is the largest asset of most families – accounting for almost one-third of the net worth of families between the ages of 55 and 64." Additionally, capital gains on principal residences are accrued tax-free, adding an additional incentive to choose this form of investment asset.

Some households own additional land, secondary homes and cottages. Others have acquired real estate as rental properties, generating income that can be sheltered through tax deductions for operating costs and capital depreciation. The total stock of such other real estate in Canada held by households was valued at around $1 trillion in 2012.[8]

Financial Assets

In 2012, Canadian households held about $1.05 trillion in financial assets such as mutual fund shares, stocks and bonds in unsheltered/taxable accounts.[9] Not surprisingly, the distribution of unsheltered investment income – which gives an indication of the distribution of asset values – is somewhat skewed toward the top of the employment-income distribution scale and to older age groups. For example, the top 20 percent of families by employment income reporting investment income in 2015 received an estimated 36 percent of all unsheltered investment income that year (Table 2).

In comparison, it took 35 percent of the households reporting investment income in the bottom employment income group to accumulate the same 36 percent of unsheltered investment income. And younger families aged 35 to 44 earned 21 percent of all investment income, compared to 45 percent for the older 55-to-64-age group.

That said, given the low level of income at the bottom 45 percent of households ranked by employment income – less than $50,000 – it is notable that more than one-third of estimated annual unsheltered investment income earned in 2015 comes from these families (Table 2).

While it may seem surprising that a significant share of income from unsheltered financial assets is earned by low- to modest-income families, such investment can be construed as a rational response to the interaction of tax-deferred withdrawals with income-tested first-pillar benefits in old age (Laurin and Poschmann 2014). In particular, one would think that the higher the clawbacks of first-pillar benefits (mainly GIS) triggered by tax-deferred retirement saving withdrawals, the lesser the incentive to save in RRSPs as opposed to taxable accounts or TFSAs.

Horner (2008) computes a life-cycle model to estimate the potential scale of the behavioural effects of GIS clawback rates on retirement savings. For GIS recipients, the net-of-tax rates of return on retirement funds invested in taxable accounts are higher than on investments in tax-deferred RRSPs (rates of return are even negative for some GIS recipients on funds invested in RRSPs). This suggests that to avoid such clawbacks, low- to modest-income workers should tend to invest primarily in unsheltered investments.

Equity Accumulated in Privately Owned Businesses

Some workers are self-employed and own their businesses. This is true of many professionals such as physicians, dentists, veterinarians, lawyers,

7 Statistics Canada, Table 205-0002.

8 Ibid.

9 Ibid.

Table 2: Percent Distribution of Total Unsheltered Investment Income Earned by Households Aged 35 to 64, by Employment Income and Age Groups, 2015

		Distribution *(percent)*	Total Unsheltered Investment Income *(percent distribution)*	Families Reporting Investment Income *(percent distribution)*
Family Employment Income Group (all ages 35-64)	Below $50,000	45	36	35
	$50,001 to $150,000	43	28	45
	Above $150,000	12	36	20
Family Age Group	35-44	32	21	26
	45-54	34	34	33
	55-64	34	45	41

Source: Authors' calculations using SPSD/M (2016).

accountants, engineers and architects. Others, particularly in the service industry, such as mechanics, daycare providers and hair stylists may also incorporate and own their facilities. Farmers hold farming assets and, on occasion, production quotas that are generally worth from a few hundred thousand dollars well into the millions.

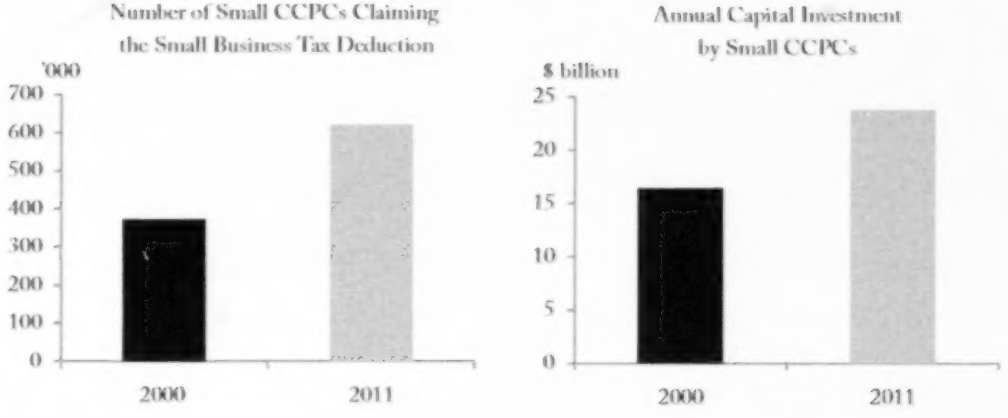
Many small business owners may choose to pay themselves only sufficient salaries and/or dividends to cover living expenses, retaining or investing (after-tax) excess profits in the corporation to finance future growth or remain competitive. Such business-asset appreciation and retained profits can form part of long-term retirement capital. When the corporation is sold, the market-value appreciation and retained earnings become capital gains, in some cases eligible for the lifetime capital gains exemption. Other owners may be planning on keeping their businesses and funding their retirement from ongoing profits. Either way, most owners are planning to convert the value in their businesses into retirement capital or income.

Tax data show some 622,000 small businesses claiming the federal small business tax deduction available to Canadian controlled private corporations (CCPCs) in 2011, up from 374,000 in 2000 (Figure 3). These small business owners invest sizable amounts in their businesses. New capital investments by small CCPCs increased from $16.4 billion in 2000 to $23.8 billion in 2011, or an average of more than $38,000 per business in that year.

Insurance Products

The role of insurance-based products, a potential cost-effective way of protecting against events that may derail retirement plans, is often forgotten in retirement discussions. Indeed, life insurance benefits can represent a significant source of retirement capital and income for a surviving spouse and children. Individual and group life insurance policies covered some 22 million Canadians in 2014, for total coverage of $4.2 trillion representing $381,000 per insured household on average.

Figure 3: Number of, and Capital Investment by, Small Canadian Controlled Private Corporations (CCPCs), 2000 and 2011



Source: Finance Canada (2013).

In 2014 alone, $8.6 billion was paid out in life insurance benefits, of which $6.3 billion was for death benefits. About two-thirds of death-benefit claims are on policyholders older than 65 at death, in most cases paid out to the surviving spouse or children (CLHIA 2015).

In addition, many permanent life insurance policies have the benefit of accumulating cash value within the policy, thus acting like a savings instrument. In traditional policies, the accrued cash values will increase as policyholders grow older, and the net amounts at risk for policyholders will, therefore, shrink. At the end of 2014, there were about 5.7 million permanent life insurance policies in force in Canada, with an aggregate cash value of $85 billion. This cash value grows on a tax-deferred basis and is accessible by the policy owner through policy loans from the life insurance company, collateral security for a bank loan or upon the surrender of the policy.

Critical illness, long-term care and disability insurance are other tools increasingly used to protect against significant medically related expenses, as policyholders grow older. In particular, the waning prevalence of private-sector DB plans coupled with continued gains in longevity make long-term care insurance a promising retirement preparedness product for households willing to protect against the risk of living longer and over-depleting their retirement capital before needing expensive home care or long-term care facilities.

The insurance industry also provides deferred and immediate annuities to Canadians wanting a more secure and guaranteed source of funds in retirement. Canadians have more than $43 billion accumulated in annuities funded from capital outside of registered retirement plans.[10]

10 Figure obtained privately from the Conference for Advanced Life Underwriting.

Inheritances

Potential inheritances have generally been ignored in past studies modelling prospective financial retirement preparedness. With an estimated $750 billion in wealth to be passed on to Canadians between the ages of 50 and 75 in the next 10 years (CIBC 2016) and potentially larger inheritances to the following generation, since boomers had fewer children than their parents, this is clearly an important consideration. As Hamilton (2015) observes, not accounting for inheritances means that home equity (an important asset owned by retirees) simply disappears from the economy at the death of owners. This is of course not the case.

It is often assumed that beneficiaries are concentrated among upper-income groups. But as Hamilton (2015) argues, it is very difficult to reconcile this assumption with the fact that the vast majority of retirees own their homes. Therefore, the spectrum of inheritance's recipients will span the entire income distribution. And with a post-baby boom average of fewer than two children per mother, we should not assume that inheritances will be as unimportant in the future as they have been in the past (Hamilton 2015).

To this point, according to the CIBC (2016), more than one-half of Canadians between the ages of 50 and 75 have already received an inheritance. The average inheritance was $180,000, with higher values in BC, Quebec and Ontario. For the rest of the country, the average sits below $100,000, with the median around $50,000 (CIBC 2016).

TFSA Accumulation

Established in 2009, the TFSA is a relatively new savings vehicle, but we would expect it to be particularly popular among lower to mid-income individuals because of its tax-efficient properties over RRSPs (Laurin and Poschmann 2010, 2014). Early statistics on TFSA participation are consistent with anticipated behaviour: as of the end of 2013, individuals with annual incomes below $45,000 accounted for more than one-half of all TFSA holders (Canada 2015).

Canadians across all income levels are using TFSAs to save. About 11 million Canadians, or four in 10 tax filers, own a TFSA. By the end of 2013, $118 billion was invested in TFSA accounts, nearly 80 percent of which was owned by individuals earning less than $80,000 annually (Canada 2015).[11]

Studies of Retirement Preparedness

A number of studies have attempted to assess the retirement income prospects of future retirees, all using different methodologies and assumptions. In 2009, the Research Working Group on Retirement Income Adequacy, reporting to federal and provincial finance ministers, issued a report that found 22 percent of Canadians were likely to experience a decline of living standards in retirement (Horner 2009). McKinsey (2012, 2015) arrived at a similar proportion of households likely to experience a decline.

Meanwhile, Moore et al. (2010) found the likelihood of experiencing a substantial reduction in consumption post-retirement decreases with age. About 40 percent of workers in their 30s would be at risk, with this number decreasing to less than 25 percent of workers in their 50s. Wolfson (2011) reached a more pessimistic view, concluding that about one-half of middle-earners in their late 40s are likely to see a large drop in living standards.

Despite reaching varying conclusions, researchers found a few common characteristics for workers likely to be more at risk of retirement income

11 $118 billion reflects fair market value.

insufficiency (Baldwin 2016). Those at risk are typically:

- middle- to upper-middle-income earners, since low- to modest-income earners would be able to maintain their pre-retirement living standards with support received from OAS, GIS and the CPP (Pillars 1 and 2) and
- middle- to upper-middle income earners not covered by a workplace pension plan and more likely to be found in the younger cohorts of workers in their 20s and 30s.

Among middle- to upper-middle income earners, it is widely believed that one-quarter to one-half of workers would be most at risk. It is difficult, however, to precisely identify who is and who is not at risk. This is because younger workers are for the most part just beginning their careers – and, on average, doing so at an older age than their predecessors – and much depends on assumptions about their future savings behaviour.

Headline results from studies of retirement preparedness assume that current younger workers will essentially reproduce patterns of older workers or reflect average historical population behaviours. But behaviour is a function of the environment, and the economic and demographic environments have changed since the 1980s when older workers joined the labour market.

There are three ways in which the environment has impacted recent behaviour. Firstly, the decline in mortgage interest rates has kept houses affordable on average despite rising housing prices. Average monthly payments on a 25-year mortgage declined from more than 45 percent of household disposable income at the start of the 1990s to around 30 percent at the start of 2000s. It now sits at around 35 percent, close to its 33 percent historical average since 1990.[12]

House prices as a share of income, on the other hand, have risen by more than 50 percent.[13] There is no doubt that younger workers are, and have been, taking advantage of low-cost debt to become more highly leveraged, though with the benefit of acquiring housing assets that are worth much more than before, relative to their incomes. Greater housing wealth and higher down payments may impact individual preferences over how much to accumulate in pension-related assets.

Secondly, the trend toward full retirement at an older age means that retirement may be cheaper to finance than would be assumed using past behaviour as a guide.

Finally, many babyboomers have been targeting a retirement income of about 70 percent of their gross pre-retirement earnings. However, recent studies have shown that future retirees can maintain their living standards in retirement with much less than that (Hamilton 2015, Vettese 2015). Hamilton, using a set of reasonable strategies, puts the sensible range of gross replacement rates between 42 percent and 74 percent.

Perhaps more importantly, data limitations have precluded studies of retirement preparedness from systematically considering the cumulative full impact of all forms of fourth-pillar wealth or to give them prominence in their analysis. One-half of home equity and imputed rent is considered in Horner (2009) and Moore et al. (2010), but other assets are not. Using proprietary survey data, McKinsey (2012, 2015) included the value of household financial assets in its main analysis, while

12 See "Just the Facts – Canada's Housing Markets," available on Canada Mortgage and Housing Corporation website, https://www.cmhc-schl.gc.ca/en/.

13 See "The Long-Term Evolution of House Prices: An International Perspective," remarks delivered by Lawrence Schembri, Deputy Governor of the Bank of Canada, at the Canadian Association for Business Economics, Kingston, Ont., 25 August 2015, available on the Bank of Canada website, http://www.bankofcanada.ca.

adding sensitivity results for a range of home-equity values. Even though full inclusion of home equity considerably improves the retirement preparedness picture, this result is not prominently reported.

Assessing the Potential Role of Fourth-Pillar Assets as Retirement Capital

What importance do fourth-pillar assets have in households' retirement planning? Can they explain low participation in traditional registered savings vehicles by some? This is a difficult empirical question because recent publicly available comprehensive household-level data on accumulated total wealth are scarce. However, Statistics Canada in 2009 began conducting the Canadian Financial Capability Survey every five years. Among its host of questions are a focused set of inquiries into financial assets and retirement preparedness. Relying on the most recent 2014 survey and performing our own tabulations, we attempt to assess Canadians' current level of retirement preparedness by including both registered and fourth-pillar assets.[14]

Using results from the survey, we can estimate how fourth-pillar assets contribute to retirement preparedness among workers generally identified by policymakers as being the least adequately prepared for retirement – the "most-at-risk" group or workers who rely primarily on personal savings to fund their retirement (Ontario 2014). In so doing, we consider only the value of assets already accumulated, despite the fact that younger workers will likely save more in future years, because such future savings are voluntary in nature.

Focusing on Who Is Most at Risk

Any analysis of retirement preparedness is necessarily a nuanced endeavor. For our part, in addition to breaking down the data by income quintile, we also separate it into three age groups:

- 35-44-year-olds;
- 45-54-year-olds; and
- 55-64-year-olds.

We exclude 18-34-year-olds because many are still in school, live at home and/or have not yet bought a home, meaning not much can be said with certainty regarding their retirement preparedness.[15]

We first identify households generally considered at a lower risk of being inadequately prepared for retirement; i.e., couples earning in the bottom two income quintiles and single people in the bottom quintile. Government pension and income security payments from Pillars One and Two are generally sufficient for married/common law working households in the bottom two quintiles to maintain their pre-retirement living standards (Horner 2011, Baldwin 2016). For single working households, Pillars One and Two would also comfortably support the continuation of pre-retirement living standards for those in the bottom income quintile. Other households benefit from a workplace pension plan from their employer. We consider both groups of households to be at a lower risk (Table 3).

14 We acknowledge the Survey of Financial Security (SFS) as another possible data source. While the SFS sample size is larger, the 6,685-sample in the Canadian Financial Capability Survey (CFCS) is sufficient for reliable statistical analysis. Furthermore, the last SFS survey year was 2012 while the CFCS was conducted more recently, in 2014. Given these reasons, in addition to the CFCS containing questions about personal retirement planning, we used its dataset.

15 Although not included here, results for the 25-to-34 age group are available upon request. Naturally, the proportion of most-at-risk households is higher in this age group. Nonetheless, already accumulated fourth-pillar assets are still a significant contributor to retirement preparedness, even in this age group, reducing the size of those most at risk in this group by 30 percent (compared to less than 40 percent for the overall population).

Table 3: Households Most at Risk of Needing Retirement Wealth from Voluntary Savings and Other Private Sources, as a Percentage of 35-to 64-Year-Old Households

Age Group	Weighted Sample Size *(number of households)*	Households Well Covered by Pillars One and Two *(percent)*	Remaining Households Covered under a RPP *(percent)*[a]	Households Most Needing to Supplement Income from Pillars One and Two with Voluntary Savings and Private Wealth *(percent)*
35-44	2,820,785	21.0	40.2	38.7
45-54	2,684,225	18.5	43.1	38.5
55-64	1,823,717	21.7	38.2	40.2
All	7,328,727	20.3	40.8	39.0

Notes: a – The figures in this column do not include those with RPPs who are fully covered by Pillars One and Two and thus understate the total contribution of RPP to retirement preparedness. Most at risk refers to household made up of 35-to-64-year-olds primarily relying on voluntary savings to maintain their current living standards in retirement.

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

Our total sample of non-retirees aged 35 to 64 consists of 7.3 million households.[16] Of those households, approximately one in five would be able to meet the standard of living they had in their working years simply with government supports and the Q/CPP. Of the remaining households, about four in 10 were covered under a workplace pension plan.

Remaining are married households in the top three income quintiles or single households in the top four income quintiles whose ability to maintain their living standards in retirement will depend upon voluntary decisions to accumulate registered retirement savings and other forms of private capital. We make this our starting group of households most at risk of inadequate retirement preparedness for the purpose of our analysis.

A number of assumptions are required to project how accumulated household wealth may translate into a sufficient income stream in retirement (see Box 1). To be safe, we have factored in a fair amount of prudence in our assumptions by assuming no further accumulation of retirement capital when, in reality, most working households would likely continue to accumulate wealth as they grow older. We also assume every household at the top end of gross asset-value ranges holds assets worth the bottom of that range. Further, we assume workers will continue to retire at 65 and that the debt levels for those in the top debt-value range are double the bottom value of that range (Box 1).

We can now evaluate the proportion of households within our base sample who have already accumulated enough RRSPs and fourth-

16 Non-retired households include those that are self-employed.

Box 1: Assumptions

We make two assumptions regarding age. First, that everyone who is not retired will retire at age 65. Second, we assume that households are in the mid-point of their age group. For example, people in the 35-44-age group will be considered 40 years of age and will thus have 25 years with which to earn investment returns on accumulated assets.

We then make assumptions concerning the amount of accumulated assets needed to afford a retirement lifestyle similar to the one currently enjoyed. Using the different population income quintiles as our starting point, we assume one would need retirement income equal to or greater than 70 percent of the lower end of their particular quintile.[17] For example, households in our second highest income quintile, earning between $80,000 and $120,000, will need $56,000 or more annually in retirement to roughly maintain a comparable standard of living, or a gross income replacement rate ranging from 47 percent to 70 percent.[18]

We also need an assumption for the real rate of return earned by voluntary saving vehicles such as a RRSP and/or for the different fourth-pillar assets in the period prior to retirement. We assume a 3 percent real rate of return on all forms of assets.[19]

Our results are not overly sensitive to small changes in the real rate-of-return assumption. Appendix Table A3 shows our key results by income quintile, assuming a lower 2 percent real rate of return. We assume that all forms of tangible and business assets can be sold, debt paid off and invested in the same way as RRSPs or financial assets. Importantly, we assume no additional future savings over current accumulations. That is, we do not model future saving behaviour; we account only for capital already accumulated.[20]

Some of our other assumptions are best illustrated through examples. Let's consider married or common-law households in the second-highest income quintile, which has a range of $80,000 to $120,000. These households, as we have seen, "need" at least $56,000 per year in retirement income. We conservatively assume the first $35,000 will come from OAS, GIS, other fiscal benefits and the CPP.[21] So they need to accumulate retirement capital over the course of their working life such that they have $21,000 a year in retirement. Thought of another way, they need a life annuity of $21,000.

17 We make one exception to this rule for single households. In the second income quintile, we assume 70 percent of the midpoint of the range is needed to meet pre-retirement living standards.

18 See Hamilton 2015 for a further discussion of consumption behaviour in retirement. Note that the 47 percent is the gross replacement using the top end of the range; i.e., 47 percent of $120,000 is $56,000.

19 Guay and Allaire Jean (2013) project long-term real returns of 2.7 percent on a 50/50-split portfolio of stocks and government bonds. Ambler and Alexander (2015) forecast real returns on long-term, risk-free investments close to 1 percent, which means that real returns of 3 percent could be produced with a portfolio yielding a 2-percent-risk premium.

20 This may seem a very conservative assumption, although the "no future saving" assumption may be partially counterbalanced by our assumption that households will not move up to a higher income quintile than the one they are found in now, and thus do not have to meet higher living standards in retirement.

21 Single households have a lower starting point than married households for calculating the required retirement annuity. Whereas the first two pillars could be expected to provide $35,000 in retirement income for married couples, the amount for single households is likely to be around $21,500. Therefore, the required annuity levels are higher for this group.

Box 1: Continued

The next question is how do we calculate how much principal these households need now to have the $21,000 annuity in retirement? According to the Globe Investor, a joint-life, no-guarantee registered annuity provides on average $440 in monthly payments for every $100,000 in RRSP savings[22] or $5,280 in yearly annuity payments for every $100,000 in retirement capital. Therefore, $397,763 is necessary at 65 to generate the required $21,000 annuity.[23] Using our assumed 3 percent real rate of return over 25 years, a 40-year-old household would need to have accumulated a principal of $189,974 at age 40 to hit this target.[24]

A similar calculation has to be done for financial assets. The only change is that we look at the annuity rate for non-registered assets,[25] which provides $428 a month for every $100,000 in non-registered financial assets, working out to $5,137 in yearly annuity payments. For net tangible and business assets, we assume that they can be sold and turned into financial assets. We therefore use the same annuity calculation as for financial assets.

Another assumption has to do with debt levels. When analyzing whether someone has enough wealth for retirement purposes, asset values must be net of debt. We, therefore, subtract debt values from tangible assets to create fourth-pillar net tangible assets.

For the value of all gross assets, including RRSPs, financial assets, tangible assets and business assets, we assume the midpoint of the ranges given in the survey, except for the top range for which we conservatively assume the low point of the range. For debt, we do something similar – we assume the midpoint of the debt ranges except for the top debt range, for which we prudently assume a value twice the size of the bottom value of that range.

22 See www.globeinvestor.com; the value is slightly lower at time of publication than at the time of original calculation. Also, current market prices for life annuity purchases are at historically high levels, which lead to higher capital requirements at retirement. Using current market values as opposed to historical averages is prudent, which may be balanced against the likelihood that younger workers may live longer than current generations and may spend more time in retirement.

23 $397,763 = (21,000/5,280) × 100,000

24 $189,974 = ($397,763/1.03)^25

25 See http://www.globeinvestor.com/servlet/Page/document/v5/data/rates?pageType=annuity_joint&guarantee_term=25&survey_type=JL&sex_of_joint=F&fund_type=N&province_of_residence=ON.

pillar assets to be able to maintain their current living standards in retirement. As described in Box 1, we assume a gross income-replacement rate ranging from 47 percent to 70 percent, consistent with that found in other literature (Vettese 2015, Hamilton 2015, Milligan and Schirle 2014).

RRSP Accumulations

We first look at the number of households with sufficient RRSP accumulation. We do this first since we want to subsequently evaluate the contribution of fourth pillar assets after all forms of retirement-branded wealth have taken into account. Between

Table 4: Impact of Accumulated RRSPs, as a Percentage of 35-to 64-Year-Old Households and as a Share of Starting Most-at-Risk Households

Age Group	Starting Most at Risk Population	From Which We Subtract Population with Enough RRSP Accumulation	Remaining Most at Risk Population, Inclusive of RRSP Accumulation	Marginal Impact of RRSPs as a Share of Starting Most at Risk Population
35-44	38.7	-2.5*	36.2	*6.5*
45-54	38.5	-3.1*	35.3	*8.1*
55-64	40.2	-1.7*	38.5	*4.2*
All	39.0	-2.5	36.5	*6.4*

Notes: Figures marked with an asterisk are associated with high levels of error. Most at risk refers to household made up of 35-to-64-year-olds primarily relying on voluntary savings to maintain their current living standards in retirement.

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

Table 5: Marginal Impact of Each Asset Class on the Most-At-Risk Population, Percent Reduction

	Percent of Total Households	Percent of Most-at-Risk Population
Financial Assets*	1.1	3.0
Business Assets*	1.3	3.6
Net Tangible Assets	7.0	19.2

Notes: Figures marked with an asterisk are associated with high levels of error. Most-at-risk population is inclusive of accumulated RRSPs, see Table 4, column 4.

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

4.2 percent and 8.1 percent of households in the most-at-risk category have already accumulated enough RRSP savings to be considered adequately prepared (Table 4). This means that once RRSP accumulations are accounted for, about 36.5 percent of households remain at a greater risk of having insufficient retirement preparedness, were it not for the additional contribution of fourth-pillar assets.

Fourth-Pillar Assets

Table 5 summarizes the marginal impact of each of the three fourth-pillar asset classes on retirement preparedness, both as a share of the total population and on the remaining most-at-risk population. The effect of each asset class is independent of any other assets, including RRSPs. That is, households move out of the remaining most-at-risk group exclusively because of the value of that asset class. This gives us a snapshot into the relative importance of each class in explaining the cumulative impact of fourth-pillar assets, presented at the end of this section in Table 6.

Table 6: Cumulative Impact of Fourth-pillar Assets, as a Percentage of 35-to 64-Year-Old Households and as a Share of Remaining Most-at-Risk Households

Age Group	Remaining Most-at-Risk Population, as a Share of Total	From Which We Subtract Share of Population with Sufficient 4th Pillar assets	Remaining Most-at-Risk Population, Inclusive of All Assets, as a Share of Total	Marginal Impact of 4th Pillar as a Share of Starting Most-at-Risk Population *(percent)*
35-44	36.2	-12.4	23.9	-34.0
45-54	35.3	-14.5	20.8	-41.1
55-64	38.5	-15.5	23.0	-40.3
All	36.5	-13.9	22.5	-38.4

Notes: Most at risk refers to household made up of 35-to-64-year-olds primarily relying on voluntary savings to maintain their current living standards in retirement.
Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

Financial Assets

Fourth-pillar financial assets in this survey comprise a broad spectrum of investments, such as cash and securities invested in taxable accounts and TFSA accumulations. They also include Registered Disability Savings Plans that, while perhaps relevant for retirement, are not technically fourth pillar. Because we cannot separate them out, they are included. Overall, financial assets alone reduce the size of the most-at-risk group by approximately 3 percent, or 1.1 percent of our total population of 35-64 working households.

Business Assets

Business assets consist of wholly or partially owned businesses, copyrights, patents, royalties and other business assets/properties. The marginal impact of business assets is of a similar magnitude to that of financial assets. Overall, business assets alone reduce the size of the most-at-risk group by approximately 3.6 percent, or 1.3 percent of our total population.

Net Tangible Assets

Tangible assets include houses or property, home furnishings, vehicles, collections, antiques, jewels, valuables and other items– homes accounting for more than two-thirds of total net tangible assets.[26] As the bulk of household debt is mortgage debt,[27] we remove debt from tangible assets to form a category called net tangible assets.

Not surprisingly, net tangible assets make up the largest fourth-pillar contribution to retirement preparedness. Overall, net tangible assets alone reduce the size of the most-at-risk group by 19.2 percent, or 7 percent of our total population.

26 Home ownership rates of our baseline sample range between 68 percent to 79 percent.

27 See Statistics Canada - CANSIM Table 380-0073. Outside of mortgages, other forms of debt include student loans, payday loans, outstanding credit card balances, outstanding balances or lines of credit, as well as other loans, debts or liabilities.

Cumulative Impact of All Fourth-Pillar Asset Classes

Most households will have accumulated wealth in more than one asset class. Taken together, their cumulative impact on retirement preparedness will be greater than the sum of the impacts of each asset class taken individually. Adding up all fourth pillar assets give us the total contribution of the fourth pillar over and above the first three pillars.

The first column of Table 6 shows the share of households still considered most-at-risk after taking into consideration the effect of Pillars 1 to 3. Adding total fourth-pillar assets cuts the size of the most-at-risk population by more than 40 percent for households older than 44 years old and by more than one-third for the 35-to-44-year-old group.

Overall, 13.9 percent of our population has accumulated enough fourth-pillar wealth to maintain current living standards in retirement, leaving 22.5 percent or more than one in five households at a higher risk. Interestingly, fourth-pillar assets play a much more significant role in retirement preparedness than do registered savings.

These results do not imply that all remaining households at a greater risk will be living in poverty in retirement, but simply that they have not yet accumulated sufficient wealth to continue their current way of life. It also means that more than three-quarters of prime working age households are likely at a lower risk of future retirement income insufficiency. It is interesting to note that the results are quite similar across age groups. This is true both from the perspective of the beginning at-risk groups, i.e., after accounting for Pillars 1 to 3 and after fourth-pillar assets are considered.

Breaking down the results by income quintile, we see that households are more likely to be at a greater risk in the top income quintile (Table 7). This result is consistent with the findings in Milligan and Schirle (2014). In the second and third income quintiles, only 3 percent and 4 percent of households, respectively, are considered most-at-risk, while approximately 7 percent of households in the fourth quintile may be at a greater risk and 8.5 percent in the fifth.

Table 7: Households Most at Risk, by Income Quintiles and Age Groups, as a Percentage of Total 35-to 64-Year-Old Households

Age Group	Income Quintile				
	2nd	3rd	4th	5th	All
35-44	1.0*	4.0	7.3	11.6	23.9
45-54	2.3*	4.7	8.4	5.3	20.8
55-64	7.3	3.6*	3.7*	8.3	23.0
All	3.1	4.2	6.8	8.5	22.5

Notes: Figures marked with an asterisk are associated with high levels of error. The first, or lowest, income quintile is excluded because members can rely on government programs to maintain their current living standards in retirement.

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

On the positive side, top-income households have more opportunity to save during their careers to get to the point they need to be at in retirement, and they are also those with the most flexibility to downsize their standard of living in retirement if needed.

Appendix Tables A1 and A2 provide a complete breakdown of these results by married/common-law households versus single households by income quintiles and age groups. Suffice it to say that, as indicated by Table 8, because we start at a higher proportion of most-at-risk households for single individuals (due to the inclusion of the second-income quintile), the final most-at-risk group is also significantly proportionally higher for singles – although single households represent only one-third of all households. That said, fourth-pillar assets still play a significant role even for single households. With respect to the breakdown by

Table 8: Cumulative Impact of Fourth- Pillar Assets for 35-to 64-Year-Olds, by Marital Status

	Married	Single
Total number of households *(thousand)*	4,895	2,434
Most-at-risk population, as a percentage of married or single total	32.7	44.1
From which we subtract share of population with sufficient fourth pillar assets…	-16.7	-8.5
Remaining most-at-risk population, inclusive of all assets, as a share of married or single total	16.0	35.6
Marginal impact of fourth pillar as a share of starting most-at-risk population *(percent)*	***-51.1***	***-19.3***

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

Table 9: Most-at-Risk 35-to-64-Year-Old Households, by Income Quintiles, as a Percentage of Total Married or Single

Income Quintile	Married	Single
2nd	-	9.2
3rd	1.9*	8.7
4th	4.4	11.7
5th	9.7	6.0
All	16.0	35.6

Notes: Figures marked with an asterisk are associated with high levels of error. The first, or lowest, income quintile is excluded because members can rely on government programs to maintain their current living standards in retirement.

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

income quintiles, most-at-risk single households are more evenly distributed than married/common-law (Table 9).

Recap and Policy Implications

Our findings suggest that fourth-pillar assets may significantly improve assessments of households' retirement preparedness and that not giving them full consideration is an important oversight.

About 39 percent of 35-to-64-year-old Canadian households will be primarily drawing from voluntary retirement savings and private wealth to sustain their retirement. This figure is well within the range of results found in previous studies and has prompted many observers to suggest that those mid- to high-income Canadian households not covered under a pension plan from their employer are at a greater risk of being ill-prepared for their retirement and ought to be mandatorily enrolled in a new government pension plan option.

However, we find that bringing already accumulated fourth-pillar assets into the picture (and, to a lesser extent, RRSPs) reduces by more than 40 percent the size of the population we

would *a priori* consider to be most at risk of not being able to maintain current living standards in retirement. The fourth-pillar impact still leaves more than one in five Canadian households most at risk of inadequate retirement preparedness because they haven't yet accumulated enough wealth while relying on voluntary savings to do so. And excluding households in the top income quintile, who arguably have more opportunity to save and more room to downsize in retirement, only about 14 percent of total households across the second, third and fourth income quintiles are most at risk.

Since this *Commentary* is intended to be a snapshot of today's financial situation, it should be reiterated that we have considered only the value of assets and debts already accumulated and have not modelled future savings behaviour. Assuming the economic environment remains on its assumed long-run trend, the portion of households that will eventually experience a significant drop in their standard of living will be much less than the figures quoted above. Many households, especially younger ones, are likely to save and accumulate more wealth as they age.

Predictably, when asked what they think will be their primary source of income at the time of their retirement, more than one-half of households we have identified as most at risk expect to rely primarily on registered savings and, to a lesser extent, fourth-pillar assets (Table 10). Very few expect inheritance and family support to play a major role. Only 9 percent expect to work later in life.

What comes out of this assessment is a picture of retirement preparedness far from a crisis requiring a major pension system overhaul. Overall, we observe a diverse and multi-pillar retirement system populated by small pockets of vulnerable households, located mostly in higher income groups for married/common-law households and spread more evenly among single households.

This finding has important policy implications for the current retirement income policy debate, notably the perceived need for mandatory government plans such as CPP expansion or the now defunct ORPP. Our results confirm what others have said: these plans are an overly broad response to a targeted problem (Hamilton 2015).

Table 10: Most-at-Risk Households by Their Anticipated Primary Source of Retirement Income

Primarily Counting on	Percent of Most-at-Risk Households
OAS, GIS, Q\CPP	35
Registered Savings	43
4th Pillar Wealth	9
Working in Retirement	9
Inheritance and Family Support	4*

Notes: Most-at-risk households as shown in Tables 6 and 7, representing 22.5 percent of all 35-64-year-old households. Figures rebased to account for households that did not or refused to answered, or did not know. Figures marked with an asterisk are associated with high levels of error.

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

The rationale behind CPP expansion and the ORPP is based on the premise that voluntary savings are inadequate for most people who do not have a workplace pension plan (Ontario 2014). This premise does not match reality. Most workers who will be forced to save more via the CPP expansion would not need it to ensure living-standard continuity in retirement.

Of the Canadian households below the top income quintile, 86 percent either have workplace pension coverage or have enough wealth accumulated to sustain current living standards in retirement – they are, therefore, at a low risk of inadequate retirement wealth. And of the most-at-risk group most often identified by proponents of expanded CPP – mid- to high-income households without workplace pension plan coverage – many have adequate

fourth-pillar wealth accumulated to sustain their retirement years. Most of those who need to do more are younger with higher incomes, but this is a group with many years left to accumulate wealth and with the most room to absorb potential declines in living standards.

For those who do not need it, money contributed to an expanded CPP is likely better invested on improving current welfare to cover pressing needs such as housing and children, rather than on improving future retirement. If an expanded CPP becomes reality, two reactions by those who do not need it are likely to happen: they will leverage their new future CPP wealth by taking on more debt or they will reduce wealth accumulating in other vehicles, such as workplace pensions, RRSPs and real estate, for the higher CPP contributions. In either case, for many, the expanded CPP will have a muted impact on its stated objective of improving retirement welfare.

There is, however, one important caveat to this assessment. Households replacing privately accumulating wealth with expanded CPP wealth may be better off in the long run if the expanded portion of the CPP renders a better after-tax return as well as improved income longevity protection for a lower risk than if that risk had been taken privately (Ambachtsheer 2016). Nevertheless, concerns are emerging with respect to the very limited payoff of CPP expanded benefits for low- to modest-income earners once first-pillar interactions are taken into account (Milligan and Schirle 2016).

Conclusion

Canada's retirement income system is based on a multi-pillar approach. The first pillar provides federal and provincial income-tested transfers to retirees funded through general government revenues. The second pillar provides public pensions, indexed to inflation, based on employment-earnings history and mostly funded through contributions of current workers, and on which an expanded portion will be grafted gradually over the next 50 years. The third pillar relies on employer-sponsored pension plans and retirement savings accounts, while the fourth pillar is basically the accumulation of private wealth in various forms.

In recent years, concerns have emerged about a perceived lack of voluntary savings for retirement, through RRSPs and workplace pension plans – and its implications for future retirement income. For many, however, fourth-pillar assets – i.e., private wealth not in workplace pension plans or in tax-assisted retirement savings accounts – can play a significant role in retirement planning by lessening the need to accumulate wealth in, for example, RRSPs. We find that taking the already accumulated portion of these assets into consideration considerably reduces the size of the group broadly assumed as being most at risk of inadequate wealth and income support in retirement.

Accumulated fourth-pillar assets and RRSPs reduce by more than 40 percent the size of the population *a priori* identified at a greater risk of not being able to maintain current living standards in retirement, from 39 percent of households 35 to 64 years old to 22 percent. Excluding households in the top income quintile, which has the greatest proportion of most-at-risk households, 86 percent of households likely have already accumulated enough to sustain their current living standards when they retire or they participate in a workplace pension plan.

Households accumulate wealth through a variety of channels. Mandating new retirement wealth accumulation through one channel may impact accumulations in other channels for households already satisfied with their current tradeoff of future versus present consumption. It is thus important to assess the impact of each pillar of retirement wealth, including the fourth pillar, to get a fuller picture of retirement preparedness.

APPENDIX A

Table A1: Cumulative Impact of Fourth Pillar Assets, as a Percentage of Married/Common-Law or Single Households

Age Group	Starting Most-at-Risk Population, as a Share of Total		From Which We Subtract Share of Population with Sufficient 4th Pillar Assets		Remaining Most-at-Risk Population, Inclusive of All Assets, as a Share of Total		Marginal Impact of 4th Pillar as a Share of Starting Most-at-Risk Population *(percent)*	
	Married	Single	Married	Single	Married	Single	Married	Single
35-44	33.0	41.6	14.2	8.0*	19.8	33.6	43.0	19.2
45-54	30.2	43.6	18.4	8.3*	11.7	35.4	61.0	19.0
55-64	33.9	48.5	18.3	9.5*	15.7	39.0	46.3	19.6

Notes: Figures marked with an asterisk are associated with high levels of error. Most at risk refers to household made up of 35-to-64-year-olds primarily relying on voluntary savings to maintain their current living standards in retirement.

Table A2: Households Most at Risk, by Income Quintiles and Age Groups, as a Percentage of Married/Common Law or Single Households

Age Group	Income Quintile									
	2nd		3rd		4th		5th		All	
	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single
35-44	-	3.3*	1.9*	8.9*	5.8	10.9	12.1	10.4*	**19.8**	**33.6**
45-54	-	6.1*	1.1**	10.6	4.1*	15.3	6.5	3.3*	**11.7**	**35.4**
55-64	-	23.3	3.1*	4.9*	2.5*	6.5*	10.1	4.3*	**15.7**	**39.0**

Notes: Figures marked with an asterisk are associated with high levels of error. The one estimate with two asterisks should be considered unreliable and mostly likely invalid. Most at risk refers to household made up of 35-to-64-year-olds primarily relying on voluntary savings to maintain their current living standards in retirement. The first, or lowest, income quintile is excluded because members can rely on government programs to maintain their current living standards in retirement.

Table A3: Sensitivity to Lower Assumed Rate of Return – Households Most at Risk, by Income Quintiles, as a Percentage of Total Households

Income Quintile	Real Rate of Return Assumption		
	2%	3%	Difference
2nd	3.3	3.1	+0.2
3rd	4.7	4.2	+0.5
4th	7.4	6.8	+0.6
5th	9.8	8.5	+1.3
All	**25.2**	**22.5**	**+2.7**

Notes: Figures marked with an asterisk are associated with high levels of error.

Source: Authors' calculations from Statistics Canada's Canadian Financial Capability Survey, 2014.

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